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Discover the Dunes



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Teachers Guide

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Environmental Education Indiana Dunes National Lakeshore



Introduction

Indiana Dunes National Lakeshore preserves over 12,000 acres of sand dunes, wetlands, forests, and prairie. These are within a two-hour drive of some eight million people, many of whom have never before visited a National Park. Nearly eighty years ago Dr. Henry Cowles began the field trip tradition in

the Indiana Dunes by bringing his University of Chicago ecology classes to the area on the South Shore Railroad. In 1980 nearly 50,000 people followed in their footsteps, coming by train, car, bus and bicycle for Ranger-led field trips. This guide will orient you to the opportunities available

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What We Offer

Field Trips with a wide diversity of areas, trails, and experiences to choose from: lake and beach, moving and stabilized dunes, forests, wetlands, "living history" at a turn of the century farm or a 19th-Century trading post.

Environmental education activities designed to fit the group's interest and the teacher's curriculum.

Special programs for disadvantaged, Spanish-speaking and disabled groups, bicyclists and joggers.

Acclimatization activities, stressing sensory awareness and ecological concepts.

Teacher workshops in environmental education methods and concepts (college credit available).

Year-round activities, from pond studies in July to cross-country skiing in January.

Seasonal programs such as Autumn Harvest at the Chellberg Farm, Winter Explorations, an historical Christmas program and Maple Sugaring.

Materials to prepare the group for their visit: slide/tape programs, films, puppet shows, environmental education games and activities, area descriptions, and bibliographies.

Accessibility by South Shore Railroad and other mass transit.

Off-site programs for schools and other groups.

Information and assistance for teachers bringing groups on their own.

Park Areas & Facilities

Bailly Homestead—Chellberg Farm

Here you can explore the cultural and natural history of the Calumet Region. Native Americans lived in the area for thousands of years. Joseph and Marie Bailly brought their family here in 1822, establishing a fur trading post. The Swedish immigrants Anders and Johanna Chellberg started their family farm nearby in the 1870's. Hiking the Bailly Trail you may visit the buildings of the Bailly Homestead and Chellberg Farm. They are being restored to their early 20th century exterior appearance; several are open to the public. An historic cemetery is located on the trail one mile north of the farm. Beech-maple climax forest thrives in the moist ravines.

TRAIL LENGTHS: A) *1½ miles round trip (includes Bailly Homestead and Chellberg Farm)*
B) *2½ miles round trip (includes Bailly Homestead, Chellberg Farm, and historic cemetery)*

PROGRAMS: *Forest Ecology, Historic Area, Chellberg Farm, Autumn Harvest, Maple Sugaring, Indian Program (primary grades), Christmas Program.*

FACILITIES: *Restrooms, drinking water, picnic area, indoor exhibits, trail brochure, handicapped accessibility to exhibit area.*



West Beach

The West Beach area includes examples of many ecosystems found in the dunes. Here students can encounter a mixed oak forest, stabilized and moving dunes, blowouts, interdunal ponds, marshland, disturbed prairie, beach and lake. Several trails are available.

RAIL LENGTHS: *1/4 to 3 miles round trip*

PROGRAMS: *Water Studies, Dune Succession and Ecology, Forest Ecology, Acclimatization programs.*

FACILITIES: *Memorial Day to Labor Day: Concession stand, changing facilities, showers. Late May to Mid-October: Full restroom facilities, drinking water. Year-round: Sheltered picnic area, restrooms or chemical toilets.*

Mount Baldy

Mount Baldy is the largest living, or moving, dune in the National Lakeshore. The trail winds through an oak forest and stabilized dunes, eventually reaching the Lake Michigan beach.

RAIL LENGTH: *2/3 mile round trip*

PROGRAMS: *Forest Ecology, Dune Succession and Ecology, Acclimatization Walks.*

FACILITIES: *Chemical toilets.*



Ly-Co-Ki-We Trail

The name Ly-co-ki-we is a Miami Indian word meaning "sandy ground." The trail begins on 14,000-year-old sand dunes, passes through wetlands which were once part of a glacial lake, and continues through an area recently swept by a forest fire. Beyond this the trail circles over 12,000-year-old dunes, through an oak forest, and back to the parking lot.

TRAIL LENGTH: $\frac{1}{2}$ to $3\frac{1}{2}$ miles round trip

PROGRAMS: *Forest Ecology, Acclimatization programs.*

FACILITIES: *Chemical toilets, picnic area.*

Miller Woods

Miller Woods is one of the most beautiful areas of the National Lakeshore, and it borders on a steel mill. Here open oak savannah grows on sand dunes dotted with interdunal ponds. Stages of dune succession range through pines and cottonwoods to the foredunes and beach. The area provides a prime location for discussing the interaction of industry and the natural landscape.

TRAIL LENGTHS: 1—3 miles

PROGRAMS: *Forest Ecology, Water Studies, Dune Succession and Ecology and Acclimatization Walks.*

FACILITIES: *None at Present.*



Visitor Center

The Visitor Center is the prime location for orientation to the National Lakeshore. Here your group may see exhibits, an orientation slide show, films, or other interpretive programs. A short trail in back of the Visitor Center loops through 12,000-year-old dunes and provides an ideal location for an introductory hike.

RAIL LENGTH: *1/3 mile round trip*

PROGRAMS: *Forest Ecology, First Visit to a Park, Acclimatization programs.*

ACILITIES: *Restrooms, drinking water, auditorium, picnic area (tables only), trail brochure, paved trail, handicapped accessibility to building and trail.*

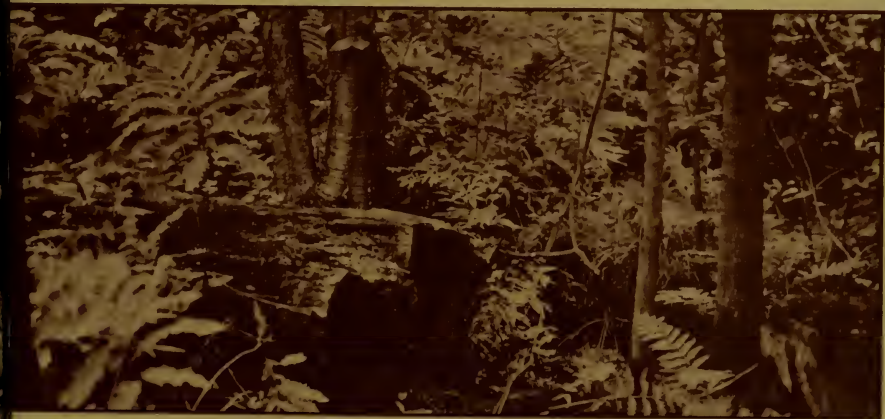
Cowles Wetlands Area

The Cowles Wetlands area encompasses a variety of environments: bog, marsh, wooded dunes, and beach. The bog and surrounding marsh lands were designated a National Natural Landmark in 1965. In this area Dr. Henry Cowles did some of the first studies in plant ecology. All trips in the Cowles Wetlands must be accompanied by a ranger. Groups will not actually go into the bog, but rather will view it from a distance while exploring the interdunal ponds, marshes, and wooded dunes of the area.

RAIL LENGTHS: *2—5 miles round trip*

PROGRAMS: *Water Studies, Dune Succession and Ecology, Forest Ecology (high school and older).*

ACILITIES: *Chemical toilet*



Environmental Education Center

The Environmental Education Center is a developing facility. At present it is available as an indoor classroom space with audio-visual equipment and work tables, to begin programs or for follow-up activities. Surrounding woods and marsh invite outdoor explorations. Self-directed learning centers enable students to explore and learn on their own.

TRAIL LENGTHS: *1/4 to 2 miles round trip*

PROGRAMS: *Energy, Winter Explorations, Forest Ecology, Water Studies, First Visit to a Park, Simulation Games, Acclimatization Programs, Teacher Workshops.*

FACILITIES: *Restrooms, drinking water, indoor area for lunches or meetings, learning center activity areas.*

Pinhook Bog

Pinhook Bog is one of the most unique and fragile areas of the National Lakeshore. Located in a depression of the Valparaiso Moraine, it is a true "quaking" bog—a sphagnum peat mat covering what was once open water. The fragile nature of the bog ecosystem limits access to the area.

TRAIL LENGTH: *1/4 mile round trip*

PROGRAMS: *Water Studies (high school and older).*

FACILITIES: *None at present.*



Little Calumet River Trail

Accessible from the Bailly-Chellberg trail, the Little Calumet River trail circles through old fields, a pine plantation, and the Little Calumet River floodplain. The trail begins near the Bailly Homestead on Howe Road, crosses the river, and connects with the Bailly Cemetery trail. This trail provides an excellent opportunity to study the geology and ecology of the river and adjacent wetlands. Quiet groups in the early morning or late afternoon can sometimes see wildlife.

TRAIL LENGTH: *3½ miles round trip*

PROGRAMS: *Forest Ecology, Water Studies, Indian Program (secondary grades).*

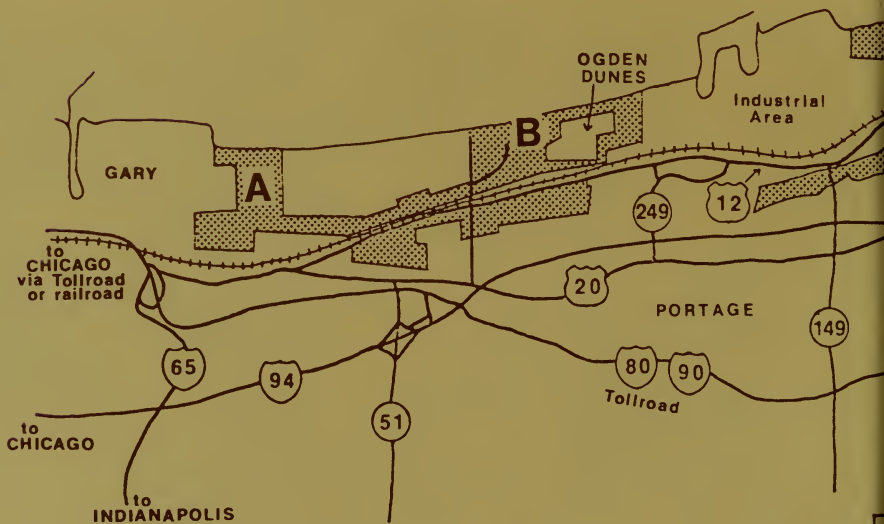
FACILITIES: *Restrooms, exhibits, drinking water, and picnic area at the Bailly-Chellberg parking lot.*

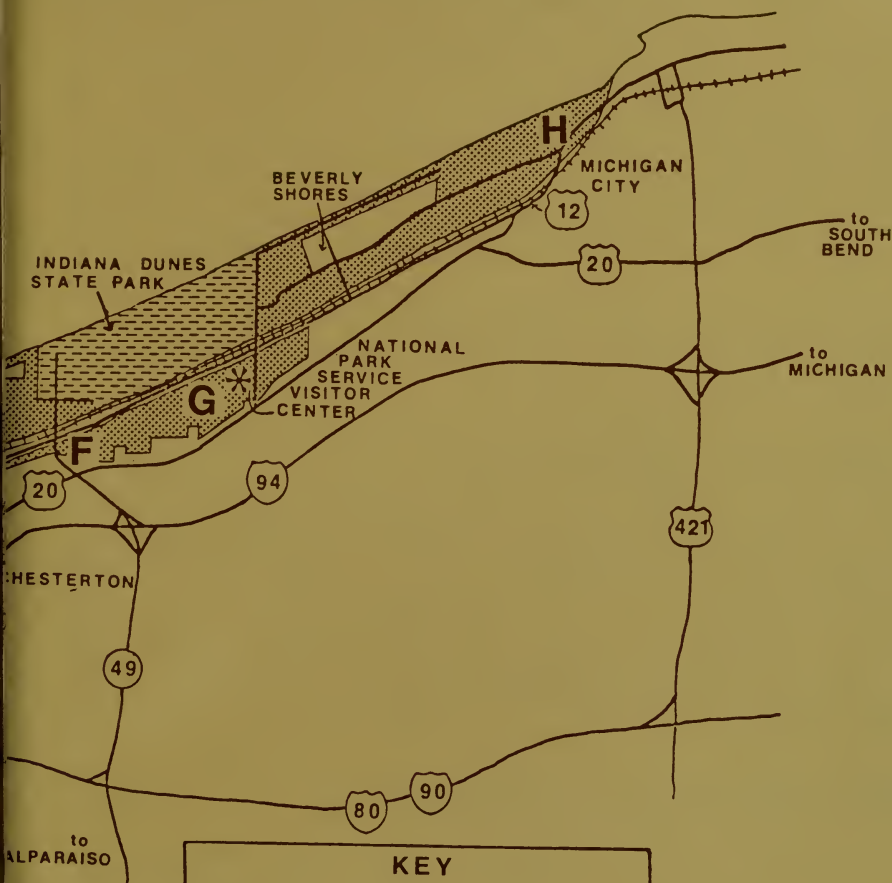


Indiana Dunes National Lakeshore



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Program Descriptions

We offer a variety of environmental education approaches, tailored to suit the needs of the group and the educational objectives for that program. Students will participate in learning activities, explore their environment through many senses, and learn how to enjoy an area without destroying it. It is important that teachers and group leaders participate in the programs, and help maintain discipline. We hope that the group's experience in the Lakeshore will not only be enjoyable, but also fit into their ongoing educational activities.

Virtually all of our programs can be enjoyed by groups with disabled individuals. We will work with groups to adapt programs and provide access.

First Visit to the Park

Our "First Visit" programs are designed especially for pre-school and 1st graders who have never visited the National Lakeshore, disabled groups who might find mobility a challenge, and other groups who desire a general orientation to the park. We begin with a look at "Special Places" by the National Lakeshore Puppet troupe and can include a film or slide show. A 1/3 mile trip on a paved trail (accessible to wheelchairs with assistance) completes the program.

Dune Succession & Ecology

The Indiana Dunes has a long history of being an outdoor laboratory for the study of ecology. Students today follow in the footsteps of Dr. Henry Chandler Cowles and join Park Rangers for an investigation of sand dune succession and ecology. The story begins with the geologic processes that have shaped the land. It then explores the succession of different ecological communities, plant and animal interactions, and human impact on the process of succession. Other elements are the flow of energy in natural systems and the ways plants and animals adapt to utilize available energy. We involve students and teachers in learning activities and sensory experiences. Programs for older students (jr. and sr. high) can include a quadrat and transect study to investigate the different ecological communities.

Forest Ecology

Our Forest Ecology program examines the interrelationships between forest denizens and their environment. We investigate the "web of life"—a network of living and non-living things powered by the sun. Students learn how the sun's energy passes from green plants to plant eaters to meat eaters to the soil and back into plants. Other influences on forest life (fire, human use, etc.) will also be investigated.

Visit an Historic Area

People have lived in this area for a long, long time. The first inhabitants, Native Americans, were followed by fur traders, farmers, merchants and industrialists. Each group has left their distinct mark. An historic area visit will look at the way each group interacted with the land, what they took from it, and what they gave back. Students will handle historic artifacts and reproductions, and visit a log cabin or barn. On special arrangement the group can meet a costumed interpreter who will bring historical characters to life and allow the children to play the roles of the people that came before us.

Visit a Turn-of-the-Century Farm

Windmills and firewood for power, no blow-dryers or TV, toys made of wood, a 2-mile buggy ride to town, no supermarkets or fast food! All of these were aspects of life at the Chellberg Farm. Students will learn about life at a time when necessities came from the land surrounding their home. They will be able to compare turn-of-the-century farm life to life today. A program will involve students in various activities: a barn-raising using a mini barn model, farm chores including planting, weeding, plowing, feeding and watering animals, making folk toys, or playing old-time children's games. Energy is also an important topic at the Chellberg Farm. Students will look at the use of wind and sun power as well as the power supplied by humans and animals.

Energy

A variety of activities and media explore the world of energy. We look at energy flow through natural and built environments, plant and animal adaptations, and the laws of thermodynamics. Programs are based at the Environmental Education Center, and are adapted for all ages.

Water Studies

The National Lakeshore has a variety of water resources available to study: Lake Michigan, interdunal ponds, the Little Calumet River, marshes and bogs. A water study program can include water quality testing, exploring plant and animal communities, investigating human impact on water resources, and sensory explorations. The role water plays in the total environment will be an important part of any water study, as will the water cycle and plant and animal adaptations to wet environments. Program participants should be prepared fully to *participate* (get wet and/or muddy).

Indian Program

Who were the native people in this area? What was their life like? How did they survive? Where are they now? These are some of the questions that will be addressed in our Indian programs. While hiking through areas where the Potawatomi once lived we will explore the lifestyle of the Indians, their origin, customs, ways of adapting to the environment, and their dealings with the fur-traders and other non-Indians. Students will play Indian games and look at Indian artifacts and replicas. We hope that students will come away from this program more aware and appreciative of those who came before us, and perhaps motivated to more gently “touch the earth” in their daily lives.

Acclimatization Programs

“Acclimatization is a program which helps people of all ages build a sense of relationship—in both feelings and understandings—with the natural world.”

—Acclimatization Experiences Institute

Acclimatization programs help students get in touch with their world through participation in carefully planned activities. We offer ACC Walks and Concept Paths. ACC Walks are enjoyable ways of reawakening individual senses and sharpening perceptions. Concept Paths focus upon discovering ecological concepts such as succession, diversity, adaptation and energy flow. Both programs are available at several areas within the Lakeshore.

Simulations

Simulation activities are available for upper elementary and high school-age groups; they can be done either at the Environmental Education Center or off-site. Simulations allow full participation, intensive interaction within small groups, development of problem solving skills, and peer presentations. The elementary-age activity involves park planning and land use, while the activity for older students weighs land use alternatives and environmental decision making. Three to four hours are needed for either activity.

Seasonal Programs

Special seasonal programs are offered throughout the year. They include: an historical Christmas program (Dec.), Winter Explorations (Jan. and Feb.), Maple Sugar Time (March) and the Autumn Harvest (Oct.). We explore 19th-Century French and Swedish holiday customs in the pre-Christmas programs at the Bailly Homestead and Chellberg Farm. Winter Explorations include investigations of animal tracks, winter adaptations, and snow studies. A special option for 5th and 6th graders is cross-country skiing. The regular program will be conducted on skis after an instructional session at the school. Maple Sugar Time allows students to investigate the process of making maple syrup and sugar from sap, at the Chellberg Farm. The Autumn Harvest, also at the Chellberg Farm, involves students in some of the harvest time activities on a turn-of-the-century farm. All seasonal programs are made by special arrangement; detailed descriptions and scheduling information are available on request.



How to Prepare for a Field Trip

Preparation is vital for a successful and enjoyable field trip. Research has shown that well-prepared students can learn more and behave better. If you schedule a ranger-led activity you will receive a pre-site packet which will help you to prepare your students for your specific program. One general aid in preparation is integrating the field trip with on-going classroom activities:

- Make it part of a unit of study; language arts, fine arts and social studies as well as science can be taught on field trips.
- Involve your students in planning what to wear and bring.
- Study the area you will visit; look at pictures, discuss the trails, plan to look for specific things on the trip.
- Tell your students the plan for the day; how far they will walk, when they will eat lunch, what they can expect to be doing.

We also ask the following preparation of every group:

- 1. Wear Clothing Appropriate for Outdoor Activities.** Jackets or raincoats are necessary if it is cool or cloudy—especially on beach programs since lake breezes may be chilling. Platform shoes and sandals are dangerous and should not be worn. Old clothing is advised since you will be participating in activities which require sitting on the ground. Ranger-conducted programs may have to be cancelled if the group is not safely attired.
- 2. Drinking Water Is Not Available Along Trails.** Bring water for your group, especially in hot weather, even if you bring other drinks for lunch. We suggest reusable containers (thermos bottles, canteens or returnable bottles) for all beverages.
- 3. Please Try To Be on Time.** Rangers can wait only a limited amount of time for each group. If for any reason you are late or cannot make the scheduled appointment, please call as soon as possible. Even if your group is late we may have to end the program on time. If your group fails to show up at all and has not cancelled, it may result in withdrawing program privileges for your group for up to two years.

4. **You Will Need to Provide Your Own Transportation.** Please be sure that the drivers know where they will be going and how to reach the park. Don't confuse the National Lakeshore with the State Park.
5. **Please Provide at Least One Adult for Every Ten Students.** This is necessary for the safety and supervision of the group. Be sure that the chaperones are adequately dressed and prepared; they should be physically able and willing to participate.
6. **If Anyone Is Allergic to Bee Stings We Must Know It Before the Program.** Please have them bring their medication and stress that they, or the group leader, must be able to administer it.
7. **Our Programs Usually Include Games and Other Activities.** We ask that group leaders and chaperones participate fully—no wallflowers please!
8. **Group Leaders Are Expected to Cooperate With the Rangers in Encouraging the Proper Behavior of the Group.** The rangers will confer with the leaders at the beginning of a program. Extremely disruptive or unsafe behavior could necessitate the termination of a program. Leader supervision of students is necessary in all restrooms.
9. **We Are All Responsible for Protecting the Parks that We Use. Please Discuss the Following Rules with Your Students.**
 - a. Stay on the trail. This helps control erosion by preventing the destruction of vegetation. Exceptions can be arranged, but please check with a ranger.
 - b. Leave the area as you found it, for others to enjoy.
 - c. Plant specimens or parts of plants may be taken only with permission. (Exceptions are edible berries and mushrooms for personal consumption; with these, know what you are eating and leave some for the animals.)
 - d. Fires are permitted only in grills and containers. Any coals must be carried out and disposed of properly.
 - e. Some properties are still in private ownership. Please respect landowners' rights.
 - f. If you pack it in, pack it out. Receptacles are provided for your trash.

To help the field trip continue into your classroom, post-site activities are also provided with many programs.

Scheduling a Field Trip

To Come on Your Own With Your Class:

1. We suggest that you visit the area yourself before bringing your group. Call us to have orientation information sent to you, or stop by the Visitor Center.
2. Decide which area to visit and what the themes and objectives for the trip will be.
3. Call the Lakeshore Visitor Center to let us know which area you will be visiting and when. **If you are bringing a bus you will need to make reservations to park at many areas.**
4. Prepare your class. If you would like pre-site materials please let us know.
5. Teacher workshops are periodically scheduled, to teach environmental education approaches and techniques. Call the scheduling office for details; college credit is available.



To Arrange a Ranger-Conducted Activity:

1. Decide what you want to accomplish with your field trip.
2. Select one or more options for program and area. Have alternative dates in mind.
3. Call the scheduling office to make a reservation; try to call at least one month in advance. The office is open from 1-4 p.m., Monday through Friday. Approximately two weeks before your program you will receive a copy of the scheduling form for your group. The names of the rangers assigned to your program will appear on the sheet. Feel free to call them to discuss the content of your program. Please be aware, however, that these assignments change without notice. Any questions or changes regarding date, time, meeting place or number of participants should be directed to the scheduling office. Please bring the confirmation sheet with you when you come. During the summer it will be your "admission slip" to many park areas.



Written inquiries or requests for programs should be sent to:

Environmental Education
Scheduling Office
Indiana Dunes National Lakeshore
1100 North Mineral Springs Road
Porter, IN 46304

Telephone inquiries or reservations should be made with the Scheduling Office: (219) 926-7561 (from 1-4 p.m., Monday through Friday).

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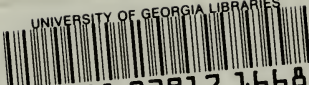
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